Abstract

The OpenNebula is an open source platform which provides flexible and feature-rich cloud management solutions; one of them is Haizea which act as lease manager and it reinforce distinctive types of leases. The deadline sensitive lease is one of the supporting leases provided by Haizea. In real time scenario, the majority of the leases are deadline sensitive and these leases are scheduled by implementing the backfilling algorithm. The backfilling algorithm optimizes scheduling by sorting one of the leases from best effort queue and allocate the free resources to schedule the deadline sensitive lease. But in some cases, if there is the same kind of leases and should be in connective in sequence than backfilling algorithm does not provide an efficient platform for scheduling. AHP (Analytic Hierarchy Process) is used to enhance the backfilling algorithm, which acts as a decision maker in the backfilling algorithm to choose the possible best lease from the given best effort queue in order to schedule the deadline sensitive lease. The overall objective of this paper is to explore gaps associated with existing backfilling based scheduling techniques.


Index Terms

Computer Science

Distributed Systems

Keywords

Haizea, Backfilling, Scheduling, AHP, live migration, load balancing, energy efficiency, Open Nebula, Deadline sensitive.